

Multivalent Ionic Compounds

So far ²binary ionic compounds with no multivalent metals.

A multivalent metal has more than one possible charge.

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Metal	Symbol	Charges	Roman numeral
copper	Cu	+1, +2	I, II
iron	Fe	+2, +3	II, III
lead	Pb	+2, +4	II, IV
tin	Sn	+2, +4	II, IV

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To name ionic compounds with multivalent metals we need to include a roman numeral that indicates the charge of the ion *not how many you have.*

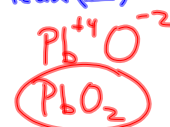
Ex. Name the following



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To find the formula from the name.

Ex. lead(IV) oxide



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Polyatomic Ions

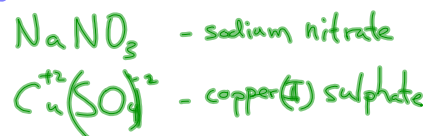
Ions formed by a group of atoms. Ionic compound with polyatomic ions have at least 3 elements in them.

Examples of polyatomic ions:

name	formula
nitrate	NO_3^-
sulfate	SO_4^{2-}
phosphate	PO_4^{3-}

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To name with polyatomics
 Simply name the metal then the polyatomic ion. No change in the ending.



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To write the formula:
potassium phosphate
 $K^+(PO_4)^{-3}$
 K_3PO_4

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aluminum sulfate
 $Al^{+3}(SO_4)^{-2}$
 $Al_2(SO_4)_3$

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